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OHIO PERFORMANCE TRIALS of PUBLIC SOYBEAN VARIETIES

Including 1997 Results

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Ohio Performance Trials of Public Soybean Varieties

The data contained in this report are published to supplement the publication "Ohio Soybean Performance Trials, 1997" (Horticulture and Crop Science Department Series 212), which presents information on performance of both public and private soybean varieties in Ohio. The purpose of the present report is to provide further information on public varieties.

The data in this report were from randomized, replicated plots that were end-trimmed before harvest to remove unbordered plants at the ends of rows. For more accurate comparisons, bordered plots were used in all tests, i.e., only the inner rows of plots were harvested to obtain yield estimates. There were two or three replications at each test location.

The environment affects varietal performance to a large degree. The use of multiple replications within a field reduces, but does not eliminate, the effect of micro-environmental differences within a field. All means reported in any field performance test are therefore subject to error. The Least Significant Difference (LSD 0.30) can be used to make comparisons between two varieties in the same test. The LSD (0.30) is calculated in such a way that, if two varieties are in reality equal genetically, their observed means are expected to differ due to random, micro-environmental variation by the amount of the LSD or greater in 30% of the tests. When the difference between two varietal means exceeds the LSD, it is likely that the difference is attributable to a real genetic difference. The notation "ns", when it appears instead of a numerical LSD value, means that there were no significant differences among any varieties at the 30% probability level.

The best variety in a particular test may not be the best in all environments. Repeating the trials at different locations and in multiple growing seasons provides more precise estimates of the true genetic differences between varieties. Therefore, **the most reliable comparisons are those based on average performance across multiple years, multiple locations, or both**. Some of the tables in this publication display average yields from several different combinations of years. In these tables, the only valid comparisons are those within an individual column.

A summary of 1997 test sites follows:

Location	*County*	*Soil Series*	*Row spacing*
Hoytville	Wood	Hoytville	30" (variety test) 15" (food-grade test) 7" (semidwarf test)
Lakeview	Auglaize	Milford	15"
Mt. Orab	Brown	Clermont	15"
Plain City	Union	Blount	15"
So. Charleston	Clark	Brookston (Kokomo)	15" (variety test) 7" (semidwarf test)
Wooster	Wayne	Wooster	30"

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Planting dates of 1997 tests varied considerably depending on location. Tests at South Charleston, Wooster, and Plain City were planted in late April and early May. Planting occurred in the second half of May at Mt. Orab and Lakeview. Wet weather delayed planting at Hoytville until June 10-11.

Characteristics of Varieties; New Varieties

Table 1 summarizes characteristics of the public varieties tested in 1997. Most of these varieties are available only as a class of certified seed. Certified seed of new varieties generally becomes available in limited quantities two years after the year of release. Thus, certified seed of 1995 and 1996 releases should be available in 1998, although supplies of the latter will be limited.

IA 2007R is a new group II variety developed by Iowa State University. It is similar to IA 2007 except that it carries the *Rps1k* gene and matures about 2 days later.

Savoy is a late-group II variety developed by the Illinois Agricultural Experiment Station. It has a high protein content and excellent yield potential. It has the *Rps1b* and *Rps3* genes for phytophthora resistance.

Flint is a late-group II variety developed by OARDC. It carries the *Rps1k* gene and has shown excellent yields for its maturity in all Ohio test locations.

Athow is a mid-group III variety developed at Purdue. It also carries the *Rps1k* gene. A short, lodging resistant variety, it has outyielded other early- and mid-group III public varieties in Ohio tests.

Defiance is a mid-group III variety developed by OARDC. It carries the *Rps3* gene and has shown a significant yield advantage over Resnik and other older *Rps1k* varieties, particularly on lake-bed soils where new Phytophthora races appear to be developing. Although tall, Defiance has excellent lodging resistance.

Iroquois is a mid-group III variety developed by the Illinois Agricultural Experiment Station. It is tolerant to phytophthora but has no major resistance genes.

General is a late-group III variety developed by OARDC. It has the *Rps1k* gene for resistance to phytophthora and is also tolerant to new races. General has had an excellent yield record on a wide range of Ohio soils.

Omaha is a group-IV variety developed by the Illinois Agricultural Experiment Station. It has the *Rps1k* gene and good lodging resistance.

The new 1997 releases, Croton 3.9 (from USDA and OARDC) and Apollo (from Michigan) will not be available to producers in 1998.

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Results of Performance Trials

Although the spring was cool throughout the state, 1997 turned out to be a very favorable growing season in most places. Hoytville and Lakeview had adequate precipitation throughout the season. At Plain City and South Charleston a dry July was followed by heavy rains in August. Although Mt. Orab and Wooster benefitted from the rains of August, the mid-summer drought lasted long enough to reduce yield potential. Phytophthora rot was observed early in the season on a few genotypes at Lakeview. The Plain City sites received 7 to 9 inches of rain on May 31-June 1, but little flooding or phytophthora damage was present on adapted genotypes. Severe lodging occurred on susceptible genotypes, particularly at South Charleston. White mold did not occur at any test site.

Results for maturity group II and early group III varieties for 1997 are shown in Table 2 (Ohio Advanced Line Test A). Averaged across all locations, Apollo and Defiance were the highest-yielding released varieties in 1997. Experimental lines HF93-082 and HS93-3779 performed very well and will be considered for release in 1998.

Results for the test of early entries since 1994 are summarized in Table 3. The earliest variety, Vertex, yielded less than Conrad 94 at all sites except South Charleston. Conrad 94 was only one day later than Vertex. Flint and Athow performed well at all test sites. In four years of testing, the difference in yield between Flint and Defiance was small at South Charleston and Wooster. Flint yielded more than Defiance at Hoytville, but Defiance was favored at Lakeview. The five-year mean revealed a 3.8 bu/a advantage for Flint over Sandusky.

Ohio Advanced Line Test B includes entries of maturity groups III and IV (Table 4). In 1997, the early check, Flint (group II) yielded more than most mid-group III entries. General had higher overall yields than the other released varieties in this test. Despite late planting, General had a large yield advantage at Hoytville. Omaha showed relatively high yields at Mt. Orab but not at other sites. The semi-dwarf variety Charleston is not well adapted to the wide (15" and 30") row spacings of these tests.

Table 5 presents a summary of the late test for 1994-97. Of the long-term entries, General and the group IV experimental strain HS93-4118 have been the best yielders. Stressland yielded well at Mt. Orab but was not as well adapted to other sites. Although Flint, the early-maturing check in this test, performed well in 1997, its three-year mean yield lagged behind that of the full-season entries.

Food-grade varieties were tested at three Ohio locations in 1997 (Table 6). For unknown reasons, Ohio FG1 and Ohio FG2 matured relatively later than usual in 1997, behaving like mid- or late group III varieties. Possibly for the same reason, they produced exceptionally large seed. Ohio FG1 yielded similarly to the best grain-type checks, Savoy and General, in 1997. Yield of Ohio FG2 was less than that of Ohio FG1, particularly at Lakeview and Hoytville.

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Table 7 summarizes the data on food-grade varieties since 1991. The two-year mean yields for Savoy and A93-651012 showed promise in relation to lines of similar maturity. Savoy has a black hilum and medium-sized seed, however, and A93-651012 does not have phytophthora resistance. Seed size of Ohio FG2 was greater than that of Ohio FG1, but the gray hilum of Ohio FG2 is not acceptable to some soyfood manufacturers. In 7 years of tests, there has been a 2.1 bu/a advantage for Ohio FG1 over Ohio FG2 and a 7.9 bu/a advantage for Ohio FG1 over Vinton 81.

Data on protein content of lines in this test were not available as this report went to press. Information on protein content is available from the authors.

Semidwarf Varieties

by R. L. Cooper

Semidwarf soybeans have now been on the market for almost 20 years, with the release of the semidwarf variety, Elf, in 1977. Subsequent varieties include Gnome, Hobbit, Sprite and Pixie, with their Phytophthora-resistant backcross versions, Gnome 85, Hobbit 87 and Sprite 87. Two additional releases include a mid-Group II semidwarf variety, Hoyt, and a mid-Group IV variety Ripley. Charleston, released in 1992, is the most recent release with an outstanding yield record. It should be well known by now that the semidwarf varieties were developed for specific adaptation to high-yield environments where lodging can limit the yield of taller varieties and that they should be solid-seeded in 7- to 10-inch rows at a seeding rate of 4 seeds/ft of 90%+ germ (300,000 seeds/A or 270,000 viable seed/A). Yet there still seems to be some grower resistance to semidwarf varieties. Why?

In an attempt to answer this question, I have talked to a number of seedsmen who have successfully marketed semidwarf varieties for many years. One common answer has been that it is the grower's inability to accurately visually estimate the yield of semidwarf varieties. Because of the positive relationship between plant height and yield in normal indeterminate varieties, growers associate taller plants with higher yield. Semidwarf varieties have a much higher harvest index (54% of the mature plant weight is seed) compared to 45% in taller varieties. This higher harvest index makes possible the combination of shorter plant height and high yield found in semidwarf varieties. The inability to see these differences in harvest index is what leads to the visual underestimate of yield of semidwarf varieties. One seedsman in Indiana pointed out that his customers who run yield checks, like Charleston, and are repeat customers. Those growers who only visually estimate yield, don't. As seedsmen, encourage your customers to run valid yield checks on Charleston and other semidwarf varieties.

Other factors contributing to grower resistance to semidwarf varieties include the requirement that they should be solid-seeded at a higher seeding rate and difficulty in accepting the concept of varieties with specific adaptation. 1 see both of these concerns becoming less of a factor. With over 70% of Ohio soybean acreage now solid-seeded, the requirement that semidwarf varieties be solid-seed is no longer a barrier to grower acceptance of semidwarf varieties. Also, with the growing interest in precision farming and yield monitors, the barriers to grower acceptance of semidwarf varieties, caused by visual underestimates of yield, and the belief that a single variety should be best adapted over all soil types and environments, are being significantly reduced. In many respects, the concept of semidwarf varieties with specific

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adaptation to high-yield environments was ahead of its time. But time is now catching up with the concept.

In developing shorter indeterminate varieties to overcome the lodging barrier to higher soybean yields, many of today's high yielding varieties are too short for highest yields on marginal, drought-prone soils. The variety, Stressland, a Group IV variety released in 1994, is a very tall, growthy variety developed for its specific adaptation to marginal, drought-prone soils. It is establishing an excellent yield record on those soil types and in such environments. A new tall, drought tolerant, Group III variety, Croton 3.9 (3.9 indicates its relative maturity) was released this year (1997). With the concept of precision farming and the development of grain drills that can change varieties on the go, it is anticipated that growers will plant semidwarf varieties on the more productive soils and switch to taller, drought tolerant varieties on the marginal soils to maximize their overall yields in fields with highly variable soil types. In 1998 both Case IH and John Deere are coming out with air drills which permit changing varieties and seeding rates on-the-go (Ohio Farmer, December 1997).

Charleston

The semidwarf variety, Charleston, continues to yield well in Ohio trials, and has largely replaced Sprite 87 and Hobbit 87, except where Phytophthora root rot is a serious problem. Charleston is tolerant to root rot but does not have the major gene resistance found in Sprite 87 and Hobbit 87. Averaged over a 3-year subirrigation/drainage study at Hoytville, Charleston averaged irrigated yields of 78 bu/a and non-irrigated yields of 60 bu/a, compared to irrigated yields of 73 bu/a for Resnik and Edison and non-irrigated yields of 58 and 56 bu/a, respectively. In 1993, a dry year, Charleston showed a 30 bu/a yield increase from subirrigation (79 vs 49 bu/a), showing its ability to respond to favorable moisture conditions. At a grower subirrigation/drainage demonstration site in NW Ohio in 1996 (the Fred Shininger Farm, Delta, OH), Charleston grown in 3-acre strip tests showed a yield increase of 23 bu/a (70 vs 47 bu/a) from subirrigation and was the highest yielding variety in the test.

Hoytville

Because of the wet spring, planting was delayed until June 11. Surprisingly, however, the yields were quite good for such a late planting. General with 74.1 bu/A and Charleston with 69.4 bu/A were the highest yielding varieties in the test (Table 8). Chapman, the earliest variety was lowest in yield (59.0 bu/A). Flint, Sandusky, Resnik, Jack, Hobbit 87, Edison, and the new late III cultivar, Croton 3.9, were all similar in yield (64 to 65 bu/A). Sprite 87, Defiance and Thorne were slightly lower in yield (62 bu/A). Averaged over 2 years (1996-97), General was highest in yield with 57.2 bu/A. Chapman was lowest in yield with 52.2 bu/A. All the other varieties were similar in yield (53 to 56 bu/A).

South Charleston

This location was planted early (May 5) and moisture conditions were favorable over the growing season, resulting in excellent yields. General and Charleston were also the highest yielding varieties at this location (79.5 bu/A and 78.5 bu/A, respectively) (Table 9). Edison, Thorne and Croton 3.9 were the next highest in yield (74 to 76 bu/A). The nematode resistant variety, Jack, and the semidwarf variety, Ripley, were lowest in yield (64 to 66 bu/A). The rest of the varieties, Sprite 87, Hobbit 87, Defiance and Stressland were intermediate in yield (70 to 73 bu/A). The yield of the tall, drought tolerant cultivar, Stressland, may have been hurt by lodging

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(2.3 score) in this high yield environment. Averaged over 2 years (1996-97), the semidwarf variety, Charleston, and General were the highest in yield with 76.8 bu/A. Thorne was next highest in yield with 75.2 bu/A. Ripley, at 63.6 bu/A and Jack, Hobbit 87 and Flyer, with 69 to 70 bu/A, were the lowest in yield. Defiance, Edison and Stressland were intermediate in yield (72 to 73 bu/A).

Summary

In 1997, General and the semidwarf variety, Charleston, were the highest in yield at both Hoytville and S. Charleston. These data suggest that growers consider including these two varieties in their variety lineup in 1998.

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Table 1. Characteristics of public varieties in 1997 trials.

Variety	Origin	Yr released	Maturity	Pedigree	Resistance[1]
Vertex	Ohio	1993	2.4	Conrad x Hayes	Rps1k
Conrad 94	Iowa	1994	2.5	(Conrad[57] x Elgin 87) x (Conrad[57] x Preston BC)	Rps1k,Rps6
Vinton 81	Iowa	1981	2.7	L60-347-4-4G-2-B x Vinton[5]	Rps1c
Apollo	Michigan	1997	2.8	S23-12 x Elgin 87	Rps1k
Chapman	Ohio	1990	2.8	A79-236002[3] x HW79149	Rps3
IA 2007R	Iowa	1995	2.9	IA 2007[4] x Archer	Rps1k
Sandusky	Ohio	1993	2.9	Conrad x Hayes	Rps1k
Savoy	Illinois	1996	2.9	Burlison x A3733	Rps1b,Rps3
Flint	Ohio	1996	2.9	GR 8836 x Elgin 87	Rps1k
Jack	Illinois	1989	3.0	Fayette x Hardin	SCN
Ohio FG1	Ohio	1994	3.2	LS301 x HS84-6247	Rps3
Ohio FG2	Ohio	1994	3.2	LS301 x HS84-6247	Rps3
Athow	Indiana	1996	3.2	A86-301024 x Resnik	Rps1k
Iroquois	Illinois	1995	3.3	LN81-1029 x A2943	
Defiance	Ohio	1996	3.3	HM8778 x A3733	Rps3
Resnik	Ohio	1987	3.4	A3127[4] x L24 (Williams 82)	Rps1k
Hobbit 87[2]	Ohio	1987	3.4	Hobbit[6] x Williams 82	Rps1k
Sprite 87[2]	Ohio	1987	3.4	Sprite[7] x Williams 82	Rps1k
Thorne	Ohio	1992	3.6	A80-344003 x (A3127[4] x L24)	Rps1k,BSR
Charleston[2]	Ohio	1992	3.6	HC74-634RE x HC78-676	
IA 3005	Iowa	1996	3.6	L82C-1212 x Kenwood	SCN
Edison	Ohio	1990	3.7	unknown	Rps1k
Croton 3.9	Ohio	1997	3.9	HC80-1944 x A3127	
General	Ohio	1995	3.9	Voris 311 x Resnik	Rps1k
Flyer	Ohio	1988	3.9	A3127[4] x L24 (Williams 82)	Rps1k
Omaha	Illinois	1996	4.2	A3733 x Resnik	Rps1k
Ripley[2]	Ohio	1985	4.3	Hodgson x V68-1034	Rps root gene
Stressland	Ohio	1994	4.3	HC80-1946 x A3127	

[1] Rps genes confer resistance to phytophthora rot;SCN=resistant to soybean cyst nematode,BSR=resistant to brown stem rot..
[2] Semidwarf variety.

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Table 2. Summary of 1997 trials of early-maturing varieties (Ohio Advanced Line Test A).

Entry	Date	Lodging	Height	Yield (bu/a)					
	Mature	score[1]	(in)	S.Char.	Plain C.	Lakeview	Hoytville	Wooster	Mean
Vertex	9/18	1.3	27.3	58.0	52.9	46.7	49.8	25.1	46.5
Conrad 94	9/19	1.4	26.2	56.5	56.2	60.3	51.5	31.6	51.2
Apollo	9/23	1.4	29.8	73.5	60.6	63.6	54.9	29.4	56.4
HF93-082[2]	9/23	1.9	29.5	66.1	59.3	60.0	56.2	35.0	55.3
Flint	9/23	1.6	27.2	66.8	61.8	55.3	55.6	28.2	53.5
9301[3]	9/24	1.7	33.4	60.7	59.9	63.1	51.2	32.3	53.4
Sandusky	9/25	1.4	29.8	64.3	57.2	58.2	53.4	30.2	52.7
IA2007R	9/25	1.2	28.0	66.1	51.5	56.3	45.0	27.1	49.2
Athow	9/26	1.5	28.4	62.4	55.9	65.0	55.1	31.2	53.9
Defiance	9/27	1.6	31.1	63.7	59.7	62.5	52.7	34.3	54.6
HS93-3779[2]	9/28	1.5	30.4	78.3	60.0	70.7	55.8	28.4	58.6
LSD (0.30)	1	0.2	1.1	5.3	5.4	4.1	3.2	3.3	2.3

[1] rated from 1 (erect) to 5 (prostrate).
[2] experimental strain.
[3] Pioneer variety included as check.

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Table 3. Multiple-year summary for early-maturing varieties, 1994-97.

Entry	1996-97			Yield (bu/a)										
	date	lodg.	ht.	S. Charleston		Hoytville		Wooster		Lakeview		All locations[2]		
	mature	score[1]	in.	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7	'93-7
Vertex	9/18	1.3	27	52.0	53.0	37.4	42.9	29.2	33.7	37.5	40.0	40.1	44.0	44.1
Conrad 94	9/19	1.4	26	54.5	52.0	44.0	48.8	39.1	42.7	52.9	52.9	47.6	49.9	--
HF93-082[3]	9/23	1.8	30	60.0	58.5	47.1	52.2	43.5	47.9	56.2	54.4	52.3	54.4	--
Flint	9/23	1.5	27	62.7	61.9	48.6	54.0	41.3	46.0	43.1	47.1	49.9	53.4	52.1
9301[4]	9/23	1.7	32	56.2	57.3	46.3	50.8	44.4	47.1	50.2	50.7	50.1	52.8	--
IA 2007R	9/24	1.2	28	59.5	--	42.3	--	33.8	--	54.5	--	47.8	--	--
Sandusky	9/24	1.4	30	57.7	58.3	45.2	50.1	36.9	39.9	39.7	43.1	45.8	48.8	48.3
Athow	9/26	1.4	276	59.3	--	47.0	--	42.6	--	58.9	--	52.3	--	--
Defiance	9/27	1.5	31	58.8	60.0	46.3	49.9	43.1	47.6	52.5	53.1	50.9	53.5	53.0
HS93-3779[3]	9/28	1.5	29	65.4	--	48.2	--	45.66	--	55.4	--	54.1	--	--

[1] rated from 1 (erect) to 5 (prostrate).
[2] includes Plain City, 1993, 1994, and 1997.
[3] experimental strain.
[4] Pioneer variety included as check.

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Table 4. Summary of 1997 trials of late-maturing entries (Ohio Advanced Line Test B).

Entry	Date	Lodging	Height	Yield (bu/a)					
	Mature	score[1]	(in)	Mt. Orab	S. Char.	Lakeview	Hoytville	Wooster	Mean
Flint	9/22	1.5	26.8	52.8	71.9	66.3	46.8	38.4	55.2
Athow	9/23	1.4	27.4	54.5	65.4	66.1	42.9	35.4	52.9
Iroquois	9/24	1.4	30.3	50.8	66.2	58.0	45.0	40.7	52.1
GR9730[2]	9/25	1.5	30.2	54.5	73.1	66.1	44.3	39.4	55.5
Defiance	9/25	1.3	30.9	56.0	62.8	61.1	44.2	41.3	53.1
IA3005	9/27	1.5	29.5	41.9	61.8	58.0	48.7	34.4	49.0
Charleston	9/27	1.4	24.6	46.3	65.1	58.0	45.2	40.3	51.0
General	9/29	1.4	29.7	63.6	67.6	63.9	56.0	40.7	58.4
Omaha	10/1	1.6	32.7	64.1	66.6	56.6	47.3	42.4	55.4
HS93-4118[3]	10/1	1.7	32.0	-I[4]-	72.8	68.5	47.9	43.2	58.7
Stressland	10/5	2.1	39.2	54.3	58.1	54.5	51.4	42.7	55.4
LSD (0.30)	1	0.2	1.5	4.2	4.4	3.6	3.2	4.3	2.6

[1] rated from 1 (erect) to 5 (prostrate).
[2] AGRA variety included as check.
[3] experimental strain.
[4] Yield data at Mt. Orab lost. Estimated missing value used to calculate grand mean.

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Table 5. Multi-year summary for late-maturing varieties, 1994-97.

Entry	1996-7			Yield (bu/a)											
	date	lodg.	ht.	Mt. Orab		S. Charleston		Lakeview		Hoytville		Wooster		All locations	
	mature	score[1]	in.	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7	'95-7	'94-7
Flint	9/22	1.4	25	41.9	--	60.9	--	40.5	--	41.0	--	44.5	--	45.8	--
Iroquois	9/25	1.4	29	45.8	49.7	62.1	64.2	52.5	51.1	41.9	46.2	47.5	50.4	50.0	52.3
Defiance	9/26	1.3	30	46.5	49.7	58.5	60.8	46.6	50.3	42.8	46.8	54.1	53.4	49.7	52.2
Charleston	9/28	1.4	23	44.7	50.0	58.8	63.7	49.3	50.0	37.2	43.6	41.09	43.5	46.2	50.2
General	9/30	1.4	28	49.6	53.0	59.6	63.3	54.2	55.2	47.3	52.3	51.8	53.7	52.5	55.5
HS93-4118[2]	10/3	1.7	30	--	--	69.4	--	62.3	--	43.9	--	52.5	--	55.9	--
Stressland	10/7	2.2	36	50.3	54.0	52.1	57.5	51.9	53.1	40.2	44.7	50.1	51.6	48.9	52.2

[1] rated from 1 (erect) to 5 (prostrate).
[2] experimental strain.

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Table 6. Summary of 1997 test of food-grade varieties and checks.

Entry	Date mature	Lodging score[1]	Seed wt. g/100[2]	Yield (bu/a) S. Char.	Lakeview	Hoytville	Mean
Conrad 94	9/19	1.4	17.9	60.8	57.4	49.6	55.9
Vinton 81	9/21	1.7	24.4	54.7	53.0	51.4	53.0
A93-651012	9/22	1.3	23.5	54.2	62.2	54.4	56.9
Flint	9/25	1.7	18.7	71.9	55.2	51.0	59.4
Savoy	9/26	1.1	20.1	65.7	66.4	57.7	63.3
Defiance	9/28	1.4	20.8	62.8	60.5	54.2	59.2
Ohio FG2	9/29	2.0	28.5	62.8	52.0	50.2	55.0
Ohio FG1	10/1	1.7	26.7	64.4	63.7	57.9	62.0
General	10/3	1.4	19.8	67.6	64.1	55.7	62.5
LSD(0.30)	1	0.2	0.8	5.6	5.2	3.8	3.3

[1] rated from 1 (erect) to 5 (prostrate).
[2] grams per 100 seeds; to convert to seeds/lb., divide 45360 by figure given (for example, 26.7 g/100 seeds equals 1699 seeds/lb.).

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Table 7. Multiple-year summary for test of food-grade varieties and checks, 1991-97.

		1996-97			
Entry	Date mature	Lodging (score)[1]	Seed weight (g/100)[2]	Yield (bu/a)[3] 1996-7	1991-97
Conrad 94	9/20	1.4	17.1	49.7	
A93-651012	9/22	1.3	22.4	53.0	
Vinton 81	9/22	1.6	22.9	47.8	44.9
Flint	9/26	1.6	17.7	56.1	
Savoy	9/26	1.1	18.9	57.3	
Defiance	9/28	1.4	19.6	54.4	
Ohio FG2	9/29	1.7	26.4	51.5	50.7
Ohio FG1	10/1	1.6	24.9	56.8	52.8
General	10/3	1.4	19.0	57.9	

[1] rated from 1 (erect) to 5 (prostrate).
[2] grams per 100 seeds; to convert to seeds/lb., divide 45360 by figure given (for example, 24.9 g/100 seeds equals 1822 seeds/lb.).
[3] includes South Charleston, 1992-97; Hoytville, 1992-94,96-97; Lakeview, 1991-94,97; and Columbus, 1991.

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Table 8. Yield comparison of semidwarf and indeterminate varieties planted in 7½-inch rows at Hoytville, OH, 1996-1997.

Variety[1]	1997[3]			Yield	
	Maturity	Height	Lodging	1997	1996-97
	(date)	(in.)	(score)[2]	(bu/A)	
GROUP II					
Chapman	9/30	31	1.5	59.0	52.2
Flint	10/2	32	1.5	65.3	55.8
Sandusky	10/3	29	1.5	64.8	56.2
GROUP III					
Resnik	9/30	28	1.0	65.6	55.4
Jack	10/3	35	2.0	64.8	54.0
Sprite 87	10/5	28	2.0	62.1	55.0
Hobbit 87	10/5	27	1.5	64.4	55.9
Defiance	10/5	31	1.5	62.1	53.2
Edison	10/4	32	1.0	64.0	54.2
Thorne	10/3	33	1.5	61.9	53.6
Charleston	10/7	26	2.5	69.4	55.4
General	10/8	34	1.5	74.1	57.2
Croton 3.9	10/8	34	2.5	64.3	-----

[1] Semidwarf varieties (Sprite 87, Hobbit 87 and Charleston) planted at 4 seeds/ft (300,000 seeds/A of 90%+ germ seed or 270,000 viable seeds/A). Indeterminate varieties planted at 3 seeds/ft (225,000 seeds/A of 90%+ germ seed or 202,500 viable seeds/A).

[2] 1 = erect to 5 = prostrate.

[3] A wet spring delayed planting until June 11.

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Table 9. Yield comparison of semidwarf and indeterminate varieties planted in 7½-inch rows at South Charleston, OH, 1994-97.

Variety[1]	1997[3]			Yield	
	Maturity	Height	Lodging	1997	1996-97
	(date)	(in.)	(score)[2]	(bu/A)	
GROUP II					
Chapman	9/20	30	1.0	67.9	66.9
Flint	9/21	30	1.5	71.2	70.6
Sandusky	9/22	34	1.0	70.8	70.6
GROUP III					
Jack	9/24	35	1.3	66.3	69.0
Sprite 87	9/30	24	1.3	72.2	-----
Hobbit 87	10/1	23	1.0	73.1	69.8
Defiance	9/25	33	1.0	72.1	73.2
Edison	9/28	34	1.0	76.0	72.6
Thorne	9/27	33	1.3	74.5	75.2
Charleston	10/1	26	1.5	78.5	76.8
General	10/1	34	1.0	79.5	76.8
Croton 3.9	10/2	38	1.0	74.1	-----
GROUP IV					
Flyer	9/30	32	1.0	71.5	69.6
Ripley	10/7	31	1.5	64.1	63.6
Stressland	10/9	43	2.3	70.0	73.4

[1] Semidwarf varieties (Sprite 87, Hobbit 87, Charleston and Ripley) planted at 4 seeds/ft (300,000 seeds/A of 90%+ germ seed or 270,000 viable seeds/A). Indeterminate varieties planted at 3 seeds/ft (225,000 seeds/A of 90%+ germ seed or 202,500 viable seeds/A).

[2] 1 = erect to 5 = prostrate.

[3] Planted May 6.

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Locations of Public Soybean Variety Trials in Ohio

1. Private Test Site, Lakeview
2. Northwestern Branch Station, Hoytville
3. Agronomy Farm, Marysville
4. Private Test Site, Mt. Orab
5. Western Branch Station, South Charleston
6. Wooster Campus
7. Columbus Campus

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